**GREEN LIVING AND WELL-BEING: A LONGITUDINAL STUDY OF VALUES, ENVIRONMENTAL ATTITUDES, AND SUSTAINABLE CONSUMPTION**

According to the United States Green Building Council, green construction is growing faster than the construction industry as a whole. The global market for green buildings is doubling every three years (Dodge Data and Analytics 2016). Not surprisingly, a great deal of attention has been paid to the environmental benefits and cost effectiveness of green buildings (Booz Allen Hamilton and United States Green Building Council 2015). Less attention has been given to the psychological and behavioral consequences of living and working in green buildings. In light of the challenges of climate change and the corresponding necessity for sustainable living environments, such consequences are critical to understand—particularly with respect to the important role of human behavior in environmental sustainability efforts.

 In this working paper, we report a longitudinal field study that compares student residents of two green dormitories to residents of two carefully selected traditional dormitories for control purposes. The objectives were threefold: 1) to determine if living in a green dormitory was associated with greater self-reported well-being and more positive social experiences; 2) to determine if living in a green dormitory had any measurable impact on environmental attitudes or behaviors; and 3) to determine if changes in environmental attitudes or behaviors could be predicted, longitudinally, from any changes in values or morality that may accompany living in a green residential facility. For the purpose of the working paper, we present a relatively streamlined literature review and focus more specifically on methods and results, given the scope and complexity of the project.

For most of history, humans attempted to escape the harshness and unpredictability of the natural environment. Philosophers at least since Rousseau in the 18th century, however, argued that humans were happier in a state of nature. Empirical research has now well verified this connection (see Hayes and Berman 2015 for a review). For instance, feeling connected to nature is associated with greater subjective well-being (Mayer and Frantz 2004; Nisbet and Zelenski 2011) and to increased mindfulness, which is also related to well-being (Howell et al. 2011). Simply taking a walk in the woods, relative to a busy street, can refresh cognitive resources (Berman and Jonides 2008). Though more limited, some evidence also suggests that well-being and mindfulness are related to sustainable attitudes and behavior (Brown and Kasser 2005).

 Unfortunately, we spend most of our lives in the built world, cutting us from the very nature that contributes to well-being. This is problematic, considering that buildings account for roughly 40% of energy consumption and carbon emissions. The green building trend attempts to address these concerns. Green building is the creation of structures and processes that are environmentally responsible and resource efficient (EPA. n.d.). The environmental benefits are well-known: Green buildings contribute 34% less than traditional buildings in carbon emissions and consume 20% less electricity on average (Department of Energy 2011). Green building is not just an attempt to improve environmental outcomes, however. Green buildings are also designed to improve physical health and quality of life, although much less is known about these outcomes (Hedge, Miller, and Dorsey 2014).

Green dorm building on college campuses is an important part of the fast-growing green building trend: Princeton Review now publishes a guide to 361 “green” colleges (in which the college in this study is ranked). However, recent calls to action for using green campus facilities as teaching and learning tools overlook their utility as research tools (Sustainability Education and Economic Development Center n.d.). One exception is a recent study demonstrating that working in green University buildings on a Canadian campus generally had a positive impact on health and satisfaction (Hedge et al. 2014).

 Our campus provided us the unique opportunity to collect data from two dormitories that had achieved LEED (Leadership in Environmental Energy and Design) status as designated by the Green Building Council—one at the highest and the other at the second-highest level (Platinum and Gold, respectively). Our first objective was to determine whether living in a green dorm had a beneficial impact on well-being. Although nature contributes to well-being (e.g., Hayes and Berman 2015), the built environment can be detrimental (Berman and Hayes 2011). We hypothesized that green buildings, however, might mitigate these negative impacts.

 Buildings themselves consume enormous amounts of energy, partly as a result of the behavior of those who use them. As such, a second objective was to determine whether living in a building with extensive green features would more greatly encourage sustainable behaviors. We hypothesized that, over time, residents of green dorms may develop more positive environmental attitudes and report engaging in more sustainable consumption.

 The third objective was to examine the basis of any changes in environmental attitudes or behavior that accompany green dorm living in moral foundations and values that are associated with environmental concerns. We focused specifically on Haidt’s moral foundations (i.e., harm avoidance, fairness, purity, obedience to authority, ingroup loyalty), as they have been shown to impact sustainable behavior (Kidwell, Farmer, and Hardesty 2013; Wolsko, Ariceaga, and Seiden 2016). For instance, Kidwell et al. demonstrated that differentially framing messages targeted to liberal and conservative moral foundations actually increased residents’ municipal recycling in a city over time.

**Method**

Data were collected at two points in time. The pretest was conducted early in the Fall 2015 semester, approximately three weeks after students arrived on campus. The post-test was conducted at the very end of the Spring 2016 semester, just prior to dorm check-out.

Students were sampled from four residence halls (dorms) on campus: Two LEED-certified “green” dorms and two non-LEED control dorms. One of each was a freshmen dorm and one of each was for upperclassmen. Both of the freshmen dorms were all female; the upper level green dorm was coed, and the upper level control dorm was all male.

After eliminating participants that completed the survey twice or provided incomplete data, the pretest yielded a sample size of 230, with relatively equivalent respondents from green (51%) and control dorms. Due to attrition, the posttest dataset included a total of 168 respondents. After eliminating participants that completed the survey twice and provided incomplete data, the final within-subjects dataset yielded a sample of 124 participants (79 females). Due to slightly greater attrition from the control dorms, approximately 64% of the final sample came from green dorms.

Participants were sent an email link to respond to a Qualtrics pretest survey Fall 2015. As an incentive to complete the survey, respondents were entered into a drawing to win one of several prizes, including an iPad and gift certificates. This pretest consisted of several measures attitudes, values, well-being, and sustainability-related behaviors, as cited below. Unless otherwise indicated, participants responded to each item on 7-pt. bipolar scales.

*Subjective Well-Being Scale* (Diener et al. 1985). This 5-item measure is the best validated and most widely used measure of global happiness.

*Mindful Attention Awareness Scale* (Brown and Ryan 2003). This 15-item scale measures trait differences in mindfulness and includes statements such as “It seems I am running on automatic without much awareness of what I’m doing.”

*Moral Foundations Questionnaire* (MFQ; Graham, Haidt, and Nosek 2009). The 20-item MFQ is a short version of the 30-item version popularized in Graham et al. (2009). It measures five moral foundations that are thought to differentiate liberals and conservatives. Of specific interest were the harm avoidance and purity domains, both linked to sustainability-related attitudes and behaviors (Feinberg and Willer 2013).

*The Short-Schwartz Values Scale* (Lindeman and Verkasolo 2005). This is a 10-item measure of the most widely used model of values, Schwartz’s circumplex, which maps 10 specific values into four broad value domains: Openness to change, Self-transcendence, Conservation, and Self-enhancement. Participants respond to all of the probes used to measure a specific value in a single item. For instance, to measure Self-direction, a component of Self-transcendence, participants are asked “Please rate the importance of the following value(s) as a life-guiding principle: Self-direction (creativity, freedom, curiosity, independence, choosing one’s goals).

*New Environmental Paradigm Scale* (NEP; Dunlap et al. 2000). The NEP has early roots in the environmental movement going back to the 1970s. The current 15-item version includes two subscales that measure endorsement of the New Environmental Paradigm, which captures the belief that humans face ecological disaster if they do not change their behavior, and, conversely, endorsement of the Dominant Social Paradigm, which captures the belief that humans have dominion over nature with no need to fear its consequences. Sample items include “Humans are severely abusing the environment” and “Humans were meant to rule over the rest of nature.”

*GREEN Scale* (Haws, Winterich, and Naylor 2014). This 6-item scale measures individual differences in sustainable consumption motivation (e.g., “It is important to me that the products I use do not harm the environment”)

Participants also responded to a single 4-pt. item measure of their recycling frequency.

Spring 2016, participants completed the posttest at the end of finals week, just prior to checking out of their dorms. They were sent the participation link as before along with the incentive offer. The posttest survey included all the same measures as well as an additional subjective self-report measure. Participants indicated their level of agreement with several statements regarding their residential experience, including their stress levels, ability to relax in the dorm, and have valuable social experiences. Three of these items were specific to sustainability: “I have learned a lot about sustainability in my residence hall”, “Living in my residence hall has made me more concerned with sustainability issues”, and “Living in my residence hall has made me think more carefully about my sustainability behaviors.”

Finally, participants reported their overall satisfaction with their residence hall experience.

**Results**

 The goal of the analyses were threefold: First, to examine the impact of living in a green dorm on self-reported experiences and well-being; Second, to examine the impact of living in a green dorm on sustainability-related attitudes, values, and behaviors; Third, to determine if any changes in sustainable attitudes and behavior over time were associated with changes in values or moral foundations over time. Unless otherwise noted, dependent measures were calculated as posttest-pretest change scores. This provided a baseline-corrected index of increases or decreases in any measure from the beginning to the end of the academic year.

*Residential experiences and well-being*

To determine if living in a green dorm positively contributed to a positive residential experience, a series of independent samples t-tests was conducted, comparing respondents in green dorms and control dorms on self-reported residential experiences. On every single measure, green dorm residents reported more positive experiences, including a greater ability to relax, better quality of sleep, lowered stress, and more positive social experiences, all *p*s < .05. However, green dorm and control residents did not differ in the overall positivity of their experience (*p* > .34). Similarly, green dorm residents reported that their living experience contributed more greatly to their learning about environmental issues, their concern for the environment, and the extent to which they considered the environmental impact of their behaviors, all *p*s < .01. Means and standard deviations for each condition are in Table 1.

 We next determined whether or not living in a green dorm had a more global effect on well-being, and, more specifically, if any effect of green residential living was moderated by their self-reported residential experiences. To this end, we collapsed self-reports into broader measures of residential experience. The first we labeled residential well-being, which included the first set of measures above (stress, relaxation, sleep, and social experiences; α = .91). The second, green learning, included the second set of measures listed above (environmental learning, concern, and behavioral impact; α = .93). The outcome variable, subjective well-being (SWB), was measured with the Satisfaction with Life Scale (Diener et al. 1985). We subtracted SWB at post-test from SWB at pre-test to compute a change score. Zero-order correlations indicated that Satisfaction With Life correlated with both measures of residential experience (residential well-being: *r* = .28, *p* < .01; green learning: *r* = .20, *p* < .05).

To determine if these relationships differed by green living, SWL-change scores were predicted from residence hall (green vs. control), residential well-being, and green learning in the first step, and their interactions in the second step. Only the residence hall X residential well-being interaction was significant in the model, *β* = .51, *t*(91) = 2.77, *p* < .01. For green dorm residents, residential well-being predicted a change in overall well-being from the beginning to the end of the semester, *β* = .52, *t*(91) = 2.94, *p* < .01. This relationship did not hold for control residents. A parallel regression analysis predicting changes in mindfulness from green residential living, residential well-being, and green learning did not yield any significant effects.

 To sum, green residential living is associated with greater residential well-being and green learning/concern for environmental issues. Furthermore, residential well-being predicted an increase in overall well-being only for residents of green dorms.

*Environmental attitudes and behaviors*

We next determined whether living in a green dorm was associated with any significant differences in environmental attitudes or behaviors. We focused on three dependent variables of interest: Green consumption motivation (GREEN; Haws et al. 2014), Environmental attitudes (New Ecological Paradigm; Dunlap 2000), and self-reported recycling behavior. In addition to gender and freshman status, we also controlled for self-reported pre-test political orientation, as it is an important predictor of environmental attitudes. Correlations among the measures are presented in Table 2.

*Green consumption***.** To examine the impact of green residential living on green consumption motivation, we first replicated the analysis above by predicted GREEN change scores from residential well-being and green learning. This yielded a significant main effect of dorm, *β* = .23, *t*(95) = 2.12, *p* < .01. Control residents actually showed a greater increase in green consumption motivation (*M* = 0.29, *SD* = 0.89) than green dorm residents (*M* = -0.14, *SD* = 0.93). The effect was driven by the fact that green dorm residents were higher in green consumption motivation at Time 1 (*M* = 5.32, *SD* = 0.85) than control residents (*M* = 4.98, *SD* = 1.03), *t*(117) = 1.98, *p* = .05.

This main effect was moderated by an interaction with residential well-being, *β* = .55, *t*(91) = 2.93, *p* < .01. Residential well-being predicted increased green consumption motivation for green dorm residents, *β* = .36, *t*(95) = 1.95 *p* = .05. Residents of non-green dorms showed the opposite trend: Residential well-being predicted decreased green consumption, *β* = .49, *t*(95) = 2.12, *p* < .05.

The analysis also yielded a significant interaction of residential well-being and green learning, *β* = .34, *t*(95) = 2.87, *p* < .01. To explain the interaction, we examined the moderating effect of residential well-being on green learning. For residents that reported greater residential well-being, green learning had no impact on green consumption motivation. However, for residents that reported lower levels of residential well-being, green learning was related to green consumption motivation [although the effect was only marginal, *β* = .40 *t*(95) = 1.77, *p* = .08].

To summarize, green dorm residents began the year higher in green consumption motivation and, on average, their scores did not change. Control dorm residents did show increased green consumption motivation over the year. However, as with overall well-being, higher levels of residential well-being predicted green consumption motivation only for green dorm residents. Furthermore, across both green and control dorm residents, greater self-reported learning and care for the environment only predicted green consumption motivation for residents low in residential well-being.

*Environmental attitudes***.** To determine if green dorm living affected environmental attitudes, we conducted a parallel set of analyses on NEP change scores. Results closely mirrored those for green consumption motivation. Although there was no main effect of green dorm living on environmental attitudes, there was a significant interaction of green dorm living with residential well-being, *β* = .61, *t*(91) = 3.23, *p* < .01. Residential well-being predicted an increase in endorsement of the New Ecological Paradigm for green dorm residents, *β* = .37, *t*(91) = 2.02 *p* = .05. Residents of non-green dorms showed the opposite trend: Residential well-being actually predicted a decrease in endorsement of the paradigm over the year, *β* = .58, *t*(91) = 2.47, *p* < .05.

*Recycling*. As before, we conducted a parallel hierarchical regression predicting self-reported recycling behavior. This analysis did not yield any effects of green dorm living. As with the green consumption DV, it did yield an interaction of residential well-being and green learning, *β* = .38, *t*(90) = 2.90, *p* < .01. For individuals high in residential well-being, green learning had no effect on recycling behavior, *p* = .71. For individuals low in residential well-being, green learning had a significant positive impact on recycling behavior, *β* = .50, *t*(90) = 2.13, *p* < .05. That is, regardless of whether residents lived in green dorms or not, green learning was only associated with a greater change in recycling for residents reporting lower residential well-being.

*Values and moral foundations*

A series of analyses were conducted to 1) determine whether living in a green dorm had any impact on values or moral foundations; and in turn 2) to determine whether, over time, changes in values, moral foundations, or well-being could explain any changes in environmental attitudes or behavior. As before, unless otherwise stated, DVs were treated as change scores; we also calculated change scores for value dimensions, moral foundations, and well-being measures for use as predictors. As before, political orientation at Time 1, gender, and freshmen status were included as control variables.

First, a series of Univariate ANOVAs conducted with each of the 5 moral foundations as dependent variables at both pretest and at posttest yielded no significant effects of green dorm living. That is, residents of both green and control dorms were equivalent at baseline, on average, and at the end of academic year. The only significant effect of any of the moral foundations was political orientation. Greater conservativism was associated with higher ingroup loyalty, authority, and purity at both pretest and posttest, all *p*s < .001. This is consistent with typical findings (e.g., Graham et al. 2009). Political orientation was unrelated to harm avoidance or fairness. A similar series of ANOVAs conducted on Schwartz’s value dimensions (openness, transcendence, conservation, self-enhancement) similarly yielded no effects of green dorm living.

 The next set of analyses was conducted to determine whether *changes* in morality, values, or well-being, over the year, 1) predicted changes in environmental attitudes, green consumption motivation, or recycling behavior over the year, and, if any observed relationships in these changes depended on green dorm living. We focused on harm avoidance and purity, moral foundations linked to sustainable attitudes in prior research (Feinberg and Willer 2013) as well as conservation and transcendence, value dimensions linked to sustainability (e.g., Cheung et al. 2014; Schultz et al. 2005).

The same model was used for environmental attitudes and green consumption motivation. A hierarchical regression was conducted, predicting each of the dependent measures from the primary independent variable (green dorm) and the control variables in the first step (gender, freshmen status, political orientation), moral foundations and values in the second step (harm avoidance, purity, transcendence, conservation) in the second step, well-being in the third step (mindfulness and SWL), and their interactions with green dorm living in the final step.

*Environmental attitudes*. The second step yielded a main effect of conservation values, *β* = .37, *t*(91) = 3.74, *p* < .001. The third step (controlling for values and moral foundations) yielded a main effect of mindfulness, , *β* = .25, *t*(89) = 2.66, *p* < .01. Increases in both conservation values and mindfulness were associated with greater endorsement of the NEP. Interactions of mindfulness and conservation with green dorm living were non-significant (*p* = .10; *p* = .66; respectively). Therefore, these relationships held regardless of whether participants lived in green dorms.

*Green consumption*. The model yielded a main effect of harm avoidance, *β* = .33, *t*(91) = 2.28, *p* < .05, such that an increase in the moral importance of harm avoidance was associated with an increase in green consumption motivation. This effect was qualified by an interaction with green dorm living, *β* = .36, *t*(83) = 2.51, *p* < .05. The interaction was explained by the fact that this relationship only held for control dorm residents, *β* = .73, *t*(83) = 3.45, *p* < .001.

The model also yielded interactions of green dorm living with transcendence [*β* = .32, *t*(83) = 2.35, *p* < .05], mindfulness [*β* = .26, *t*(83) = 2.61, *p* < .05], and subjective well-being [*β* = .25, *t*(83) = 2.34, *p* < .05]. For green dorm residents, increases in transcendence and mindfulness were associated with increases in green consumption motivation over the year. For control dorm residents, there was a trend in the opposite direction for mindfulness, *β* = .38, *t*(83) = 1.70, *p* < .10] as well as well-being [*β* = .37, *t*(83) = 1.74, *p* < .10]. That is, increases in mindfulness and well-being were marginally associated with a *decrease* in green consumption motivation over the year.

*Recycling*. The final model was conducted in order to determine if changes in attitudes predict changes in actual environmental behavior. Having established that specific moral foundations and values were associated with environmental attitudes (conservation) and consumption motives (harm avoidance), the goal of this analysis was to in turn examine the impact of these changes in environmental attitudes and consumption motivation on behavior. The first model was identical to the previous model, with green consumption as the dependent variable, with one exception. The well-being measures were replaced with environmental attitudes. That is, we examined the impact of environmental attitudes on green consumption, controlling for values and moral foundations. The effect was significant, *β* = .44, *t*(90) = 4.46, *p* < .001. It was not moderated by green dorm living. The second model was conducted with green consumption as a predictor variable (in addition to environmental attitudes), and recycling behavior as the dependent variable (as opposed to green consumption). In this model, only green consumption was significant, *β* = .28, *t*(89) = 2.34, *p* < .05. Increases in green consumption were associated with increases in recycling behavior.

To sum, increased endorsement of the NEP (environmental attitudes) predicted increases in green consumption, after controlling for changes in values and morality that also affected attitudes; In turn, these increases in green consumption predicted increases in self-reported recycling behavior over the year, controlling for changes in environmental attitudes.

**Discussion**

The results of this study represent, to our knowledge, the first attempt to comprehensively capture the impact of living in a green dorm on psychological well-being, environmental attitudes and sustainable behavior over time, in a controlled quasi-experimental field study. Below, we briefly summarize the major findings in order to draw some general conclusions. We then highlight some limitations of the study as well as its key contributions.

Residents of green dorms reported better residential experiences across a number of domains: increased relaxation, better sleep, lower stress, and stronger social bonds. They also reported enhanced learning about and concern for environmental issues. Interestingly, all residents experienced a greater change in well-being over the year when they reported both greater residential well-being and environmental learning, suggesting that regardless of whether one lives in a green facility, learning about the environment contributes to enhanced well-being over time. This is perhaps not surprising, given that the college at which the study was conducted emphasizes sustainability across a variety of curricular and co-curricular programs. Previous research demonstrates a relationship between environmental attitudes and well-being (Brown and Kasser 2005); our research shows that this relationship can strengthen over time.

Although both green learning and residential well-being were independently associated with greater overall well-being, the effect of residential well-being only held for green dorm residents. Thus, it was also the case that when controlling for residential well-being, green learning no longer predicted well-being. This suggests that, in green dorms at least, having positive experiences is a stronger predictor of well-being, and may account for some of the same variance in well-being contributed by green learning.

Residential well-being in green dorms was also a strong predictor of environmental attitudes and behavior. Green dorm residents that reported higher residential well-being also showed increases in both green consumption and endorsement of the New Ecological Paradigm, indicative of their concern for environmental issues. Only residential experiences were related to recycling behavior, however, independent of green dorm living. Specifically, green learning was associated with increases in recycling behavior, but only for residents low in well-being—a pattern also observed on the green consumption measure. This finding is consistent with the fact that residential well-being appears to matter more than green learning, for overall well-being as well as environmental attitudes and green consumption. In its absence, however, sustainability education matters, at least for green behavior (consumption motivation and recycling).

 The study provided some preliminary evidence that changes in underlying psychological values, moral foundations, mindfulness, and well-being accompany changes in environmental attitudes and behavior. For environmental attitudes, these effects were generally observed, regardless of green living. For instance, increased endorsement of the New Ecological Paradigm was accompanied by increased mindfulness and conservation values. For green consumption, these effects depended on green living. Increases in green consumption were accompanied by increases in harm avoidance and transcendent values for residents of green dorms. On the other hand, *decreases* in green consumption were accompanied by diminished mindfulness and well-being for residents of the control dorms. Although these effects were only marginally significant, they are consistent with the other evidence presented here that a sustainable living environment is critical for supporting the relationship between well-being and sustainable behavior.

 Given that this was a longitudinal field study that was only quasi-experimental in nature, there are a number of potential limitations that bear on the validity and generalizability of the findings. Of greatest concern was the degree of attrition. Only about 60% of participants that completed the survey at Time 1 completed the survey at Time 2, reducing the usable sample from 230 to 124. In addition, the sample of residents that initially completed the survey represented only about half of the sampling population, meaning that the data reported here account for about 25% of the residents of the four dormitories. Preliminary analyses seem to indicate that the individuals that did not complete the post-test did not differ from those that did in any appreciable way; nonetheless, the unavoidable self-selection biases at both Time 1 and Time 2 may limit the generalizability of the findings.

 Second, due to real-world student housing and sampling constraints, there was something of a gender and class confound. We included one freshman and one upper class dorm in each condition, and one all-female dormitory in each condition as well. However, these two variables were confounded in that both freshmen dorms were also the two all-female dorms. The upper-class green dorm was co-ed, and the upper-class control dorm was all male. In addition to the gender-class confound, this resulted in a rather large gender imbalance, as roughly two-thirds of the total population was female. We controlled for these imbalances by including gender and class standing in each analysis. Additionally, controlling for the interaction of these two terms, which helps to address the confound, did not generally change the results of the analyses, suggesting that these concerns did not affect the major conclusions drawn here.

 Finally, although we constructed a quasi-experiment by selecting green dorms and comparing them to control dorms, as well as by including a within-subjects longitudinal component, we cannot make any truly causal claims from the analyses reported here. The strongest claims can probably be made regarding the self-reported residential experiences that were greater among green-dorm residents, although even this finding depends on the careful controlled comparison of these residents. Due to the real-world nature of the field study, this claim is made with caution. Similar caution is warranted drawing conclusions regarding the analyses that show relationships between psychological constructs and environmental attitudes and behaviors. Because there were no main effects of green dorm living on any of these variables, we did not test for mediation or moderated mediation, which would have provided for stronger causal arguments. Rather, it is only possible to say that certain psychological constructs move together with certain environmental constructs over time—sometimes in general, sometimes only in green living facilities. It may be that increases in harm avoidance, for instance, really do causally increase green consumption motivation. We cannot exclude the possibility that the opposite pattern is true, however, to choose just one possible example from the analyses presented here.

In spite of these concerns, these findings represent an important early step in understanding the effects of green living not just on environmental or physical well-being, but also on psychological well-being and sustainable behavior. Furthermore, they provide real-world evidence of changes over time, as opposed to simple cross-sectional survey evidence, more typical of research in this domain. The findings provide real-world support for previously established relationships among various measures of well-being, environmental concern, and sustainability (e.g., Brown and Kasser 2005; Howell et al. 2011) as well as relationships among moral foundations, values, and sustainability (see Steg and de Groot 2012, for a review).

Though a more thorough theoretical examination of these relationships is beyond the scope of this working paper, the findings do indicate the relationships have important, real-world applicability. While the analyses presented here do not speak to the question directly, a fascinating objective of future research would be to causally demonstrate the underlying drivers of real-world sustainable behavior. Is it possible to shape values or change moral foundations in a way that increases sustainability, or do values and morality only moderate behavior, as prior research has demonstrated (e.g., Kidwell et al. 2013)? Is well-being a cause or a consequence of sustainable behavior, or is the relationship reciprocal? Such questions should be of interest to governments, green building administrators, sustainability researchers, psychologists, and marketing researchers interested in sustainable consumption, among others.

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Table 1. *Means and Standard Deviations (in parantheses) for measures of environmental attitudes, behavior, and well-being*.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | **Residence** |  |  |
|  |  |  |  | **Green Dorm** |  |  | **Control** |  |
| **Measure** |  | Fall 2015 | Spring 2016 | Change | Fall 2015 | Spring 2016 | Change |
| *Environmental* |  |  |  |  |  |  |  |
|  | NEP |  | 5.31 (0.81) | 5.45 (1.03) | 0.11 (0.91) | 5.26 (0.67) | 5.49 (0.84) | 0.31 (0.80) |
|  | GREEN |  | 5.32 (0.85) | 5.32 (1.13) | 0.00 (0.91) | 4.97 (1.03) | 5.14 (1.17) | 0.15 (0.92) |
|  | Recycling |  | 2.97 (0.53) | 3.06 (0.58) | 0.13 (0.60) | 2.80 (0.69) | 2.83 (0.56) | 0.03 (0.61) |
| *Well-Being* |  |  |  |  |  |  |  |
|  | Satisfaction With Life | 4.65 (1.19) | 4.90 (1.34) | 0.27 (1.34) | 4.39 (1.53) | 4.69 (1.67) | 0.43 (0.93) |
|  | Mindfulness |  | 3.56 (0.84) | 3.47 (1.10) | 0.08 (1.02) | 3.43 (0.73) | 3.42 (0.76) | -0.01 (0.93) |
| *Self-report* |  |  |  |  |  |  |  |
|  | Valuable Social Experiences |  | 5.07 (1.53) |  |  | 4.44 (1.89) |  |
|  | Feeling Relaxed |  | 5.37 (1.45) |  |  | 4.75 (1.66) |  |
|  | Better Sleep |  |  | 5.52 (1.58) |  |  | 4.47 (1.87) |  |
|  | Relieved Stress |  |  | 5.00 (1.63) |  |  | 4.08 (1.86) |  |
|  | Learn about Environment |  | 5.13 (1.63) |  |  | 3.86 (2.09) |  |
|  | Concern for Environment |  | 5.04 (1.59) |  |  | 3.53 (1.93) |  |
|  | Think about Behavior |  | 5.06 (1.65) |  |  | 3.72 (1.88) |  |
|  | Overall Residential Experience |  | 5.45 (1.66) |  |  | 5.11 (1.85) |  |

Table 2. *Correlations among longitudinal change scores in environmental attitudes, behaviors, well-being, and moral foundations/values.* ***Green Dorm correlations are bolded****; control dorm correlations are not.*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | GREEN | NEP | Recycling | SWL | Mindfulness | Harm Avoidance | Purity | Transcend | Conservation |
| GREEN |  | .25 |  .36\* | -.23 | -.13 |  .53\*\*\* |  .31\* | .10 | .15 |
| NEP |  **.61\*\*\*** |  | .00 | .08 | .29 | .17 |  .50\*\*\* | -.15 | .16 |
| Recycling |  **.26\*** |  **.24\*** |  | -.15 |  -.46\*\* | -.05 | -.11 | -.24 | .15 |
| SWL |  **.37\*\*** |  **.40\*\*** |  **.26\*** |  | .21 | .17 | .26 |  .24\* | .07 |
| Mindfulness |  **.33\*\*** |  **.42\*\*\*** | **.21** |  **.32\*\*** |  | .05 |  .55\*\*\* | -.01 | .13 |
| Harm Avoidance |  **.35\*\*** |  **.35\*\*** | **.17** | **.20** | **.09** |  |  .53\*\*\* | .27 | -.14 |
| Purity | **.23** |  **.36\*\*** |  **.34\*\*** |  **.45\*\*\*** |  **.25\*** |  **.42\*\*\*** |  | .03 | .13 |
| Transcendence |  **.38\*\*** |  **.39\*\*\*** | **.04** | **.18** | **-.09** |  **.61\*\*\*** | **.17** |  | .23 |
| Conservation | **.23** |  **.44\*\*\*** | **.16** |  **.25\*** | **.16** | **.19** | **.16** | **.33\*\*** |   |